

Remarks

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 12, 18 and 20 have been amended. No claims have been added or canceled. Thus, claims 1-37 are pending.

CLAIM REJECTIONS - 35 U.S.C. § 102(b) - Ueda

Claims 1-37 were rejected as being anticipated by U.S. Patent No. 5,175,618 issued to Ueda, et al. (*Ueda*). For at least the reasons set forth below, Applicants submit that claims 1-37 are not anticipated by *Ueda*.

Claim 1 recites:

utilizing even-parity field prediction to unidirectionally predict content of each of a plurality of fields of the predicted frame from corresponding fields of only the temporally closest anchor frame, *wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.*

Thus, Applicants claim using unidirectional prediction to predict the contents of a frame that is *defined as a bi-directionally predicted frame by the encoding protocol* being used for the stream of data.

The Office Action of July 2, 2004 states:

The examiner respectfully disagrees with the applicant. It is submitted that Ueda discloses unidirectional prediction (77 of fig. 12, note a inter-field/inter-frame motion compensation circuit performs uni or one-direction motion compensation prediction, see also col. 14, lines 13-16) from a frame (**another frame** fig. 10) that is defined as a bi-directionally predicted frame according to the encoding protocol...

See page 3, Response to Arguments (emphasis original). That is, the Office Action asserts that Ueda discloses uni-directional prediction of a frame based on a bi-directionally predicted base frame.

Assuming this characterization of Ueda is accurate, it does not disclose the invention as claimed. Specifically, claim 1 recites

...wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame...

which is in contrast to the teaching of Ueda as set forth in the Office Action of July 2, 2004. Therefore, *Ueda* cannot anticipate the invention as set forth in claim 1.

Therefore, Applicants submit that *Ueda* fails to anticipate the claimed invention because *Ueda* does not disclose a unidirectionally predicted frame that is defined as a bi-directionally predicted frame according to the encoding protocol. *Ueda* discloses motion compensation and inter-field prediction “as the conventional manner.” See col. 7, lines 10-13. Therefore, *Ueda* not only does *not* disclose unidirectional prediction for a frame that is *defined as a bi-directionally predicted frame according to the encoding protocol*, but *Ueda* explicitly discloses following the encoding protocol for motion compensation and prediction.

Claims 2-11, 31, 32 and 33 depend from claim 1. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 2-11, 31, 32 and 33 are not anticipated by *Ueda* for at least the reasons set forth above.

Claim 12 recites:

a motion estimation circuit to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity

field prediction to unidirectionally predict content of each of a plurality of fields of the predicted frame from corresponding fields of a temporally closest anchor frame in the stream of data, ***wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim a motion estimation circuit that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used.

As discussed above, *Ueda* discloses conventional frame prediction and motion compensation. Therefore, *Ueda* does not disclose a motion estimation circuit as claimed in claim 12.

Claims 13-17, 34 and 35 depend from claim 12. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 13-17, 34 and 35 are not anticipated by *Ueda* for at least the reasons set forth above.

Claim 18 recites:

A storage medium comprising a plurality of executable instructions which, when executed, causes an executing processor to implement a motion estimation function to utilize even-parity field prediction to unidirectionally predict content of each of a plurality of fields of a predicted frame from corresponding fields of a temporally closest anchor frame, ***wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim a storage medium having instructions to implement motion estimation that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used. Claims 19, 36 and 37 depend from claim 18.

As discussed above, *Ueda* discloses conventional frame prediction and motion compensation. Therefore, *Ueda* does not disclose a storage medium having instructions to implement motion estimation as claimed in claims 18, 19, 36 and 37.

Claim 20 recites:

predicting, unidirectionally, content of each of a plurality of fields in non-reference frames and select reference frames using information contained in merely corresponding fields of a single past or subsequent, temporally closest, reference frame, ***wherein the unidirectionally predicted non-reference frames comprise a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim motion estimation that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used. Claim 30 is directed to a storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 20.

As discussed above, *Ueda* discloses conventional frame prediction and motion compensation. Therefore, *Ueda* does not disclose a motion estimation circuit as claimed in claims 20 and 30.

Claims 21-29 depend from claim 20. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 21-29 are not anticipated by *Ueda* for at least the reasons set forth above.

CLAIM REJECTIONS - 35 U.S.C. § 103(a)

Claims 1-37 were rejected as being unpatentable over U.S. Patent No. 5,293,229 issued to Iu (*Iu*) in view of *Ueda*. As discussed above, *Ueda* not only does ***not*** disclose

unidirectional prediction for a frame that is defined as a bi-directionally predicted frame according to the encoding protocol, but *Ueda* explicitly discloses following the encoding protocol for motion compensation and prediction.

Iu discloses a variation on I, P and B fields as defined by the MPEG standard. See col. 3, lines 3-5. However, this variation substitutes B fields for I or P fields. See col. 3, lines 5-7. Thus, *Iu* discloses bi-directional prediction where the MPEG standard defines unidirectional prediction or no prediction. Accordingly, *Iu teaches away* from the claimed invention by teaching the *opposite* variation on an encoding standard. Therefore, not only does *Iu* not cure the deficiencies of *Ueda* as set forth above, *Iu* teaches increasing the number of bi-directionally encoded frames. Applicants therefore submit that no combination of *Ueda* and *Iu* can teach or suggest the invention as claimed in claims 1-37.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1-37 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application.


Application No. 09/274,152
Amendment dated December 31, 2004
Response to Office Action of July 2, 2004

Atty. Docket No. 042390.P7110
Examiner Vo, Tung T.
TC/A.U. 2613

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Respectfully submitted,
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